

ABSTRACT

The present invention is directed towards an electrosurgical cutting system. The system comprises an electrically conductive blade, having first and second blade surfaces. First and second insulators are affixed to the first and second blade surfaces, respectively. A blade edge, a region between the first and second blade surfaces, has an edge radius of curvature, which preferably is small. A source of pulsed electrical energy coupled to the electrically conductive blade provides a substantially uniform and highly enhanced electric field along a cutting portion of the blade edge.

The system can also be comprised of a wire electrode. Despite the fact that its field is strongly enhanced around the apex, a uniform vapor cavity is formed and then ionized using an appropriately designed burst of pulses, preferably of alternating polarity.